

EXHIBIT “C”



Dec 19 2008
5:15PM

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

In Re: Methyl Tertiary Butyl Ether ("MtBE")
Products Liability Litigation


MDL: No. 1358
Master File C.A. No.
1:00-1898 (SAS)

This document relates to the following case:

City of New York v. Amerada Hess Corp., et al.,
04 Civ. 3417

EXPERT REPORT OF MARTIN R. TALLETT

EnSys Energy & Systems, Inc.
1775 Massachusetts Avenue
Lexington, MA 02420


Signature

December 19th, 2008

Date

Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.

Table of Contents

1	Qualifications.....	2
2	Summary of Opinions.....	4
3	MTBE & Ethanol Comparative Costs – in Company Studies.....	5
4	Producibility of Phase I RFG Containing Ethanol	15

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

1 Qualifications

My name is Martin R. Tallett. I am the President of EnSys Energy & Systems, Inc., a petroleum industry consultancy specializing in quantitative evaluation of refining, regulatory, technology and market issues in the petroleum industry.

In November 2008, I was retained by the City of New York and Sher Leff LLP in *City of New York v. Amerada Hess Corp.*, 04 Civ. 3417, which is part of a multidistrict proceeding in the United States District Court for the Southern District of New York, entitled *In re: Methyl Tertiary Butyl Ether ("MTBE") Products Liability Litigation*, MDL No. 1358 (SAS), Master File No. 1:00-1898, M21-88. This document relates to the case: *City of New York v. Amerada Hess Corp.*

I was previously retained by Weitz & Luxenberg, PC and Baron & Budd, PC in the *County of Suffolk and Suffolk County Water Authority v. Amerada Hess Corp.*, 04 Civ. 5424 and *United Water New York, Inc. v. Amerada Hess Corp.*, 04 Civ 2389, actions, which were also part of the *In re MTBE* proceeding.

The principle purpose of that work, in which I was assisted by my long-time associate, Mr. Daniel N. Dunbar, was to assess the various defendants' decisions to use MTBE from among other oxygenate options (primarily ethanol) in complying with the requirements of the Clean Air Act Amendments of 1990.

On June 8, 2007, I filed an Expert Report (hereinafter the *Suffolk* Expert Report) in that matter. I detailed my qualifications and compensation in that report. On October 8, 2007, I filed a Rebuttal Report under the same action (hereinafter the *Suffolk* Rebuttal Report).

The primary purpose of this new Expert Report is to supplement my opinions in the *Suffolk* case by presenting my review and assessment of internal oil company documents concerned with the costs of using ethanol versus MTBE in gasoline. My earlier *Suffolk* Expert Report, Rebuttal Report and Deposition Testimony are essentially unchanged and I am therefore incorporating and adopting that work for the purposes of this case.

My opinions formed in this case rely, in large part, on my experience in and consulting to the oil industry over the past 37 years; in addition, on a significant number of documents as referred to above.

I reserve the right to supplement, expand or modify these opinions in the light of any new information I receive or review.

The hourly rate at which I charge my time in this case is \$450 per hour for in-office work and \$500 per hour for out-of-office work, including depositions and court time.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Supporting senior consultants, legal and research assistants are billed at in-office rates of \$400 to \$105 per hour.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

2 Summary of Opinions

I have been retained to analyze and review documents pertaining to refinery economics and the decision to use MTBE. My opinions on these matters were set out in my *Suffolk* Expert Report of June 8, 2007 with adjustments and additions set out in my *Suffolk* Rebuttal Report of October 8, 2007. I have since been asked by the legal representatives of plaintiffs to further comment on the costs of using ethanol versus MTBE in gasoline as perceived by oil companies as they reviewed their options for achieving compliance with the Oxy fuel and reformulated gasoline programs set out in the Clean Air Act Amendments of 1990. This new Expert Report sets out my opinions based predominately on review of internal oil company studies, reports and memoranda made available to me to date. My work on this case remains ongoing and, as such, I reserve the right to revise and update my analysis and conclusions should new information in this matter become available.

Based on my review of the above-referenced expert reports, I find nothing that compels me to alter my opinions as stated in my *Suffolk* Expert Rebuttal Reports. I now offer comments and opinions on firstly the perspectives oil companies held themselves on the comparative costs of using ethanol versus MTBE in gasoline to comply with the CAAA of 1990 and secondly on an assertion made by Professor Stavins in his February 21st, 2006, Declaration that ethanol containing Phase I RFG could not be produced under the Simple Model. No one should construe the fact that I have not commented on a specific topic or opinion in the Stavins or other Reports as my agreement with those reports' statements and/or opinions.

Based on the Defendants' information reviewed, and my education, professional training and prior experience, I have concluded the following:

- 1. Oil Companies' internal studies in the late 1980's through early 1990's show they anticipated projected close supply costs for use of ethanol versus MTBE in oxy/reformulated gasoline. Estimates ranged from a cost disadvantage to ethanol at the upper end of the 2 – 6 cpg (\$1990) range from published studies I reviewed to distinct supply cost advantages to ethanol.**
- 2. Professor Stavins was incorrect to claim that the form of the EPA Phase I Simple Model effectively precluded using ethanol in RFG from 1995 through 1999. On the contrary, ethanol was used extensively in Phase I RFG under the Simple Model.**

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

3 MTBE & Ethanol Comparative Costs – in Company Studies

In my *Suffolk* Expert Report, I had concluded that, based on a series of studies published in the early to mid 1990's, the incremental cost estimated for using ethanol rather than MTBE in Federal RFG lay in the range of 1.6 – 5.7 cpg (\$1990); to quote "My overall assessment of the costs of using ethanol in RFG, (expressed in \$1990), is that the costs have doubtless varied from refiner to refiner and from region to region but, overall in the US, have been estimated as lying in the range of 1.6 – 5.7 cpg for use in Federal RFG (less inside PADDII) with a central range of around 3 – 4 cpg." *Suffolk* Expert Report at 75. In my *Suffolk* Rebuttal Report, and in response to the analysis of Professor Hausman, I concluded "Several errors undermine the strength of Prof. Hausman's analysis. As confirmed within several early industry studies, my assessment of the incremental cost differential between ethanol and MTBE presents a conservatively high range. Even if I were to accept all of Prof. Hausman's assertions, the impact on my analysis would be minimal. My outer range for incremental costs of using ethanol rather than MTBE in RFG would move from 1.6 – 5.7 cpg (\$1990) to 1.6 – 6.2 cpg. Review of my central range of 3 – 4 cpg shows that this range stands and is – if anything – conservative on the high side; it is plausible to claim a central cost figure of around 2.5-2.9 cpg. In addition, application of Prof. Hausman's own figures and references confirms my 3 – 4 cpg range, even when including allowance for substantial increase in corn price." *Suffolk* Rebuttal Report at 2.

I have since reviewed oil company reports and memos which discuss the estimated costs of using ethanol versus MTBE in oxy gasoline and RFG. These documents span from 1990 to 1993 and are focused on the question of how each individual company would comply with the CAAA of 1990. My aim was to assess whether the internal oil company analyses arrived at cost differentials that were broadly similar to those assessed in the published studies I had reviewed – or whether they showed oil companies had markedly different perceptions of these differential costs. My concern was whether the studies showed incremental supply costs for using ethanol that would have led to oil companies ruling ethanol out of contention on economic grounds, (for instance, had incremental costs of ethanol use been estimated by oil companies as far higher - 10, 15, 20, 25 c/gal of gasoline – than those for using MTBE).

My conclusion was that essentially none of the internal studies showed incremental costs for ethanol use higher than those I assessed from the published studies (1.6 – 6.2 cpg [\$1990]) and that, in a number of instances, the conclusion reached was that ethanol had an economic advantage over MTBE.

Set out below are summaries of the documents I relied on in reaching this conclusion. The studies cover a range of geographies, of application to oxy versus Federal reformulated versus California reformulated gasolines, and of specific oil company initial positions.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Throughout the 1980's, oil companies had responded in different ways to the requirements of the lead phase-out program. Faced with the need to raise the unleaded octane level of their gasoline grades, some had opted to make in-refinery process modifications not involving oxygenates that would produce the needed octane increase¹. Some refiners elected to produce MTBE in-refinery, to purchase available merchant MTBE or ethanol. Thus at the end of the 1980's, as oil companies faced the prospect of oxy and reformulated fuel programs, different companies had different starting positions as reflected in different levels of established oxygenate supply – if any - and also of prior investment in oxygenate production – again if any.

According to a Purvin & Gertz report² prepared in October 1990, Table III-1, existing US MTBE capacity as of January 1st, 1990, was 97,600 barrels per calendar day (bpcd), of which 36,100 bpcd constituted in-refinery units and 61,500 bpcd merchant plants. These figures compare with total consumption of MTBE of 208,000 bpd in 1995 and 267,000 in 2000 (per my *Suffolk* Expert Report Exhibit 5-2); also total combined MTBE plus ethanol in 1995 of 298,000 bpd and 375,000 bpd in 2000. Thus, the industry was faced with substantially increasing its oxygenates supplies. Prior, "sunk cost", supplies comprised the minority of total requirements, especially if only in-refinery plant were considered as truly "captive".

In addition, Table II-2 of the same Purvin & Gertz report shows that, based on current capacity and planned projects, the 14 leading US refiners were mainly in a position where available MTBE capacity (including affiliated merchant plants) comprised only 2.14% down to 0.26% of their 1989 gasoline sales. Since RFG was expected to comprise at least 30% of the market, satisfying the oxygenate requirement using MTBE would have required MTBE supply at or above 3.3% of gasoline sales. Thus, in 1990, the majority of US refiners were in a position where they needed to substantially increase their oxygenate supplies. Only ARCO at 20.99% and Phillips at 3.36% were already above the 3.3% level.

Recognizing this, the internal memos and studies I reviewed were generally focused on the comparative costs of bringing incremental MTBE or ethanol into gasoline (rather than the economics of applying existing volumes already being supplied from in-refinery facilities).

In the summaries below, I have focused on the estimated supply economics differences between ethanol and MTBE. The studies cover a range of geographies and vary in their focus on Winter oxy fuel, RFG or total oxygenated fuels. Recognizing these factors, nothing in the internal oil company documents in my opinion comprised a conclusion that any company saw incremental ethanol versus MTBE costs as materially above the 1.6 –

¹ Examples include expansion and/or operational modifications to cat-cracking (FCC), catalytic reforming, isomerization and/or alkylation units.

² "MTBE Supply Strategy," Report Prepared for Texaco Refining & Marketing Inc. by Purvin & Gertz, October 1990, City NY022155-022189.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

6.2 cpg (\$1990) range I derived in my *Suffolk* Expert and Rebuttal Reports³. Also, while several of the in-company studies focused on the Midwest and Northwest, I again see nothing in those reports that would indicate that oil companies saw extraordinary incremental costs for using ethanol in the Northeast and New York. Several studies concluded that there was an economic advantage to using ethanol, especially in the Midwest and Northwest. Further, the documents I reviewed cover a subset of the refiners operating in the US in the late 1980's / early 1990's, not every company. However, while companies will and do vary in their positions, I would not expect the economics of MTBE versus ethanol in any studies I have not been able to review to be dramatically different from the range of economics in the studies and documents I was able to review.

As I identified in my *Suffolk* Expert Report, supply economics was not the only consideration in companies' decisions to use ethanol versus MTBE. Other factors weighed by the companies included: supply security, processing and blending flexibility, distribution, and possible usage and image issues. These various factors were also evident in the in-company studies I reviewed.

³ One Koch Industries study (FHR000132864-869) showed benefits for using ethanol ranging from +1.51 cpg to -8.86 cpg versus MTBE.

Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.

Company	BPAmoco (AOC)
Title	Situation Analysis
Author(s)	AOC Oxygenate Strategy Team
Date or time Period	March 1993
Exhibit ID	BPA00208808
Region(s)	Gulf Coast, Mid West, East/South and West Coast

Economics Figure 7, East/South Oxygenate Production Costs, 1995 compares production costs (operating plus capital) of MTBE, TAME and ethanol on an "MTBE equivalent basis". Figure shows propylene oxide MTBE at 58 c/gal, "ethanol at Atlanta" at 77 c/gal, FCU MTBE at 80 c/gal, FCU TAME at 96 c/gal and both Saudi and U.S. [Gulf Coast] dehydro MTBE at 122 c/gal. "Although ethanol is cost competitive with FCU based TAME and MTBE units it has made little penetration in the East and South because of quality perceptions. Ethanol's cost effectiveness may result in ethanol penetrating the East/South oxygenate markets in the future."

Figure 8, Midwest Oxygenate Production Costs, 1995 compares production costs (operating plus capital) of MTBE, TAME and ethanol on an "MTBE equivalent basis". Figure shows "ethanol at Chicago" at 77 c/gal, FCU TAME at 99 c/gal and U.S. Gulf Coast dehydro MTBE at 128 c/gal. "Ethanol will have a significant cost advantage against Midwest refiner ether units. ADM's control of approximately 55% of the ethanol market will provide it with the opportunity to price ethanol below refiner ether or Gulf Coast dehydro plants". Also, with reference to Midwest supply: "Refiner MTBE and TAME units will have a significant cost advantage over Gulf Coast [MTBE] dehydro units; however, they will still have a significant disadvantage versus ethanol."

Added Commentary "As consumers become accustomed to MTBE's odor, health concerns will not be a significant issue. Spill remediation will pose more concern, but not impede MTBE use. Higher remediation cost will be a consideration in deciding which oxygenate to use."

"The EPA is very concerned about causing gasoline supply problems or price spikes, and will limit the rate of RFG opt-ins in a very conservative fashion to insure sufficient oxygenates and reasonable prices."

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Company	BPAmoco (AOC)
Title	Marketing Strategy for 1995 RFG Oxygenates
Author(s)	J.L. Nardo
Date or time Period	Not provided but believed from other documents, including BPA00588085 and MDL1358 dated August 31st, 1993, to be in the second/third quarter 1993 time frame
Exhibit IDs	BPA00233882 and MDL1358
Region(s)	Midwest and Northeastern States

Economics

In this report, the Marketing division of Amoco recommends the use of MTBE in the northeastern states and ethanol in the Midwest (i.e. Chicago/Milwaukee). MTBE should be used in the east/south mostly because of supply logistics. The section under Cost Analysis "shows strong incentives for ethanol over the next several years, especially in the Midwest"

Ethanol advantage, cents per gallon

	1995	1998	2003
Chicago	5.0	6.0	1.5
New York	3.4	4.3	(0.7)

Current perceptions are that ethanol is a "lower-quality" component and therefore customers expect a price break of 1 to 3 cents per gallon; also deduct 0.6 to 1.0 cents per gallon if Amoco does not adopt the first mover posture. New York incentives do not include investment for tankage at affected terminals.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Company	Mobil Oil Company
Title	Ethanol Usage on the West Coast
Author(s)	Interoffice Correspondence C.G. Jubinsky to D.J.Hackett
Date or time Period	June 21, 1993
Exhibit IDs	M0025242
Region(s)	West Coast
Economics	<p>This memo states that 5.7% ethanol is more economic than MTBE at the Torrance refinery, with the seasonal incentive for ethanol ranging from \$4.2 to \$5.8 million, (0.95 – 1.29 cpg), depending on the assumptions used. “Further, the price of ethanol must exceed \$1.52 per gal while the price of MTBE on the Gulf Coast spot market is 75C/gal before we would prefer MTBE rack blending. Such a high price spread between ethanol and MTBE is not predicted.”</p>
Company	Mobil Oil Company, USM&R
Title	Ethanol-Blended RFG
Author(s)	Interoffice Correspondence A.L. Clark to seven individuals
Date or time Period	November 16, 1993
Exhibit IDs	MDL 1358hM-004149-52 MBFX-016067
Region(s)	Not stated
Economics	<p>“Preliminary analysis of the information gathered from a wide variety of sources indicates that, as long as the 54 cpg Federal tax incentive remains that we must begin to focus more attention on ethanol’s viability. This is particularly true in the Midwest.” Then, “With your help, my goal is to develop a comprehensive listing of Ethanol-blending’s costs and benefits for eventual distribution to the Regional teams.”</p> <p>“Ethanol is priced 3.0 to 7.5 cpg less than MTBE with the 54 cpg tax incentive for 10% ethanol blends. Acquisition and transportation costs are 1.0 to 2.75 cpg below MTBE.”</p>
Added Commentary	<p>With regard to marketing considerations, the memo concludes that most majors will likely choose MTBE over ethanol. The few that choose ethanol may find themselves outside of step with competition and at a disadvantage from the consumer’s perception of quality in urban markets. However, it is noted that in a recent Chicago survey 67.7% of the consumers indicated no preference for MTBE versus ethanol if prices were equal.</p>

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Company	Mobil Oil Company,
Title	Ethanol Economics
Author(s)	Interoffice Correspondence P.N Di Giovanni to W.D. Robb
Date or time Period	November 30, 1990
Exhibit IDs	XOM-NC0308-00440-00448; XOM-DTU-00020540; MDL1358hM-0982562-570
Region(s)	Not stated
Economics	This memo analyzes the competitive economics of ethanol versus MTBE with a tax incentive of 54 cents per gallon of ethanol. The analysis concludes that, at 7.8% ethanol versus 15% MTBE, MTBE blended gasoline enjoys a 6.6 c/gal advantage. At 10% ethanol versus 15% MTBE, ethanol blended gasoline shows a 3.6 c/gal advantage to the gasohol user. "In order to overcome this bias toward gasohol, ethanol would need to be priced at 149c/gal or 38c/gal over octane parity while MTBE is priced at octane parity".

Company	Mobil Oil Company,
Title	Oxygenated Gasoline Program – U.S. Marketing Oxygenated Gasoline Implementation Strategy
Author(s)	Interoffice Correspondence
Date or time Period	July 24, 1991 or 1992
Exhibit IDs	XOM-NC0108-01466 to XOM-NC0108-01473; MDL1358hM- 0814975 to 0814982
Region(s)	Nationwide
Economics	This memo sets out key parameters in Mobil's oxygenated gasoline strategy. Hand written notes (XOM-NC0108-01471) indicate similar anticipated costs for gasoline oxygenated with ethanol and with MTBE, the latter higher: "ethanol w/tax incentives 0.5 – 2.0 cpg over conventional", "MTBE...2 ½ - 3 cpg oxygas vs conv". Another hand written note (XOM-NC0108-01469) under "maximize recovery of increased cost of oxygenated gas" indicates a similar cost advantage to ethanol. It notes "pricing" then "USM+R 5-7 cpg" then "spot 3-5 cpg?" with arrows leading to "ethanol 1-2 cpg over convent." and "MTBE 2-3 cpg over ethanol".

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Company	Texaco
Title	Western Region Oxygenates
Author(s)	R.C. Oelkers
Date or time Period	June 2, 1992
Exhibit IDs	ALL 0001324, MDL 1358
Region(s)	Northwest

Economics In 1992 Texaco switched from using MTBE to ethanol in Washington and Oregon: "this decision was made only after careful consideration of all reasonable alternatives and only in the face of overwhelming economic reality."

"Failure to switch to ethanol would have placed the Pacific Northwest Division at a severe competitive disadvantage in our primary markets in the Northwest. In addition to short term financial impacts next winter, our market share position in the Northwest could have been permanently jeopardized."

The memo states "The driving force behind industry's selection of ethanol over MTBE is the large tax subsidy in Washington (4c/gal) and Oregon (5c/gal) which is additive to the federal tax credit. ... With a federal tax credit of another 5 c/gal, the tax advantage for ethanol in those two states becomes an insurmountable 9-10 c/gal." In a table entitled ETHANOL VS MTBE ECONOMICS, the costs of Winter oxygenated gasoline with (a) 16% MTBE and (b) 10% ethanol are compared for each of Portland and Seattle. The cost tabulations show advantages for the ethanol blend of \$0.075 - \$0.094/gal depending on the octane level and state. Interestingly, if the state and federal subsidy benefits to ethanol are removed entirely, the disadvantage to using ethanol ranges from \$0 to \$0.016/gal. Thus, with even one of the state or federal subsidies in place ethanol, shows an advantage and its disadvantage with no subsidy at all is small.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

Company	Chevron
Title	Oxygenate Supplies for Northwest region CO Non-Attainment Blending
Author(s)	D.C. Smith
Date or time Period	October 17, 1991
Exhibit IDs	Master List 67: Chev17400-01
Region(s)	Washington and Oregon
Current Position	Currently using MTBE, looking to buy ethanol. "Our best current market intelligence tells us that most of our competition in the Northwest Region, with the exception of Texaco, will use ethanol for CO non-attainment compliance."
Economics	<p>"I understand that Supply has an opportunity to lock-up ethanol supplies at below-market prices if we act quickly. Mr. N.B. Clark has written a memo to Mr. L. L. Day that states using ethanol purchased at quoted prices versus MTBE would result in savings of 3-9 cents per gallon of blended gasoline for Oregon and Washington CO non-attainment areas.</p> <p>"We agree that savings of this magnitude dictate an affirmative decision to use ethanol, but continue to have some apprehensions about using and transporting ethanol and ethanol-blended gasoline. We are particularly concerned about product quality issues related to winters of the Pacific Northwest, especially if these products are to be shipped by marine transport. We cannot risk water contamination of region gasoline due to wet ethanol."</p> <p>"It is important the projected cost savings be realized since we know from past experience that using ethanol-blended gasolines will increase Marketing operation expenses relative to blending with MTBE. We estimate the annual dry-out of terminals and service stations, the necessity to replace service station filters with ethanol-compatible filters, and increased filter maintenance will increase annual Region operating expenses by as much as \$0.55MM. We are willing to accept these additional expenses provided we can maintain at least 3 cpg savings over MTBE, and if there is significant use of ethanol by our competitors in the Region. Our best current market intelligence tells us that most of our competition in the Northwest Region, with the exception of Texaco, will use ethanol for CO non-attainment compliance."</p> <p>"In summary, Marketing will incur significant incremental costs and has serious concerns about system dryness if ethanol is used in place of MTBE. However, these costs are offset by the quoted savings of 3-9 cpg blended gasoline (at least \$9MM per year). We,</p>

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

4 Producibility of Phase I RFG Containing Ethanol

In his Declaration in Support of Defendants' Motion for Summary Judgment on Preemption, Professor Stavins repeatedly quotes EPA documents to build the assertion that ethanol was effectively unusable in Summer Phase I RFG, in either the Northern or Southern RFG regions. He states in his Summary of Opinions, ¶ 7, page 2, that "EPA's own assessment indicates that because of ethanol's volatility that the refining industry could not have achieved EPA's Phase I (1995 to 1999) RFG standards for volatile organic compound (VOC) emissions using only ethanol in RFG". In ¶ 21, page 6, Professor Stavins induces from EPA's April 1992 supplemental notice of proposed rulemaking that "EPA effectively was stating that 0.6 psi was the maximum reduction in RVP that refiners could achieve during Phase I. However, if all refiners used ethanol, because of ethanol's RVP boost, the refiners would have had to reduce RVP by 1.6 to 2.0 psi to achieve those same Phase I standards (a 1.0 to 1.4 psi reduction to offset ethanol's RVP boost plus the 0.6 psi reduction required by the standards). This 1.6 to 2.0 psi reduction *would have been far in excess of the 0.6 psi reduction that EPA considered to be the maximum achievable RVP reduction.* [Tallett italics added.] Thus, by EPA's own assessment, the achievability of the Phase I VOC standards depended on refiners being able to use MTBE, thereby avoiding the need to offset ethanol's RVP boost through further reductions in RVP."

As I understand the point Professor Stavins is trying to make, he is attempting to assert that EPA assumed widespread MTBE use in their analyses and therefore set (RVP) standards that effectively precluded use of ethanol in Summer Phase I RFG in both the Northern and Southern RFG regions; that use of ethanol (in Summer RFG) would have been "*far in excess of the...maximum achievable RVP reduction*" and, arguably by implication, that oil companies therefore had to use MTBE.

In my *Suffolk* Expert Report of June 8, 2007 I produced exhibits (4-1 through 4-4) taken from the EPA website and referring to the results of annual sampling undertaken by the RFG Survey Association. This Association's sampling activities are required under EPA's implementation of the CAAA 1990 to check that delivered RFG meets standards in every RFG region and by season (Summer, Winter) each year. I stated on page 43 that "Exhibits 4-1 and 4-2 indicate that ethanol has consistently been the predominant oxygenate in RFG in the Chicago region, including RFG listed under the Simple Model in the period 1995 through 1997". In order to confirm that the ethanol-blended gasoline shown in the Exhibits was indeed blended and certified in accordance with the Simple – not Complex - Model in the 1995 through 1997 period⁴, I contacted John Weihrauch at the EPA. He was involved in the administration of the RFG program at the time. He responded in an e-mail to my colleague Daniel Dunbar, which included the following

⁴ In the period from 1995 through 1997, RFG suppliers had to option to blend and certify under either the Simple or the Complex Model.

*Methyl Tertiary Butyl Ether (MTBE) Products Liability Litigation
Expert Report of Martin R Tallett, EnSys Energy & Systems, Inc.*

“The regulations did provide for the early use of the Complex Model as an option, but there were essentially no takers. Compliance under both standards was not an option – it was an either/or situation. By and large the Simple Model ran its course through 1997 and in 1998 there was a switch over to the Phase I Complex Model.”

I therefore conclude that Professor Stavins argument that the EPA set standards that effectively precluded ethanol in Summer in the 1995-1997 time period – with the implication that the industry therefore had to use MTBE – has no basis, at least for Northern regions which constituted the bulk of RFG demand.

As discussed in my *Suffolk* Expert Report, I reviewed a series of published RFG studies undertaken in the early 1990's. Also, as discussed in this Report, I have reviewed a number of in-house oil company RFG studies conducted in the same time frame. Not one of those – published or in-house – presents arguments that using ethanol in Summer Phase I RFG would be “*far in excess of the ...maximum achievable RVP reduction*” and therefore impractical. Finally, Phase II RFG in theory allows RVP flexibility but, in practice, Summer blends have to achieve low RVP levels in order to meet VOC emissions standards. Ethanol has been successfully used regionally, Summer and Winter, since 2000 under Phase II and nationwide since 2006. I therefore conclude that Professor Stavins assertions are not based in reality.